/24 cont'd/

243 only the second period. If the dry fields are not planted with miscellaneous crops during the first period, they are simply left fallow. But in actuality, even in the Li area, wet rice fields which can be cultivated twice a year, are very few, and those which are held by the Miao are even rarer.

The Miao still do not know the use of the sickle for reaping in harvesting. They gather the stalks by hand, tie them together in sheaves, and then put them into a ho-ts'ang /drying bin/ to be dried by exposure to the wind or by the sun. The rectangular drying bin is built of bamboo with thatch on top and all four sides left open. The floor is made of long planks on which the grain is spread. After it has been thoroughly dried, the grain is moved to a granary, which is also rectangular, is built of wooden boards covered with thatch, and has a raised floor. It is all shut up except for a door on the front side. The grain is neatly stored in the granary and is not taken out until it is needed. The milling process consists of placing the grain into a rectangular wooden mortar in which the grain is pounded with a wooden pestle to remove the husks. /25/ Then the grain is once more put into a wooden mortar to be hulled into rice. The rice mortar is circular just like that used by the Li.

311 The everyday food of the Miao comes almost entirely from till-
241 ing the mountain slopes. Only a very few comparatively wealthy Miao own flat rice fields. Since each piece of hilly land cannot be used continuously for more than two or three years before the soil becomes depleted, it is necessary to stop planting it. For instance, a mountain area planted in this way may be quite large, but it is not difficult to have the total area completely tilled by rotation
[34] within eight to ten years, and the soil of the whole area must be allowed to recover. At this time then the Miao must seek fresh
166 land in other localities. Therefore, the Miao frequently move once every few years, or at least once in a decade; thus their life is as unsettled as a drifting ship. I have observed this situation with my own eyes during the period of my study.

244 They cultivate very few vegetables, but sugar cane and bananas
245 may be seen occasionally.

/61 cont./

was due not to human nature but to environment. A policy geared to the solution of the basic problem should try to improve the livelihood of the Miao and to remove the pressure of population through migration. Otherwise, Miao disturbances cannot be eliminated and will remain a source of trouble.

Restricted by the size of their land area the Miao seek to utilize every inch of land. Comparatively level land is made into fields to be inundated. The slopes from the foot to the waist of the mountain are terraced. The higher slopes are made into yü fields. On mountain land unsuitable for grains are planted tung trees (Illus. 32), tea plants (Illus. 33), and pine trees (Illus. 34). Oil can be extracted from tung and tea seeds, and the pine tree yields lumber (Illus. 35), thus providing relatively good profits forming the major part of their income from auxiliary products. Hence, the Miao are experienced in planting the tung tree and tea plants.

The planting of the tung trees requires first the selection of a site where not only is the earth suited for the tung tree but where the location is convenient for picking and transportation. If the slope is precipitous, transportation is difficult, and moreover the seeds may roll down into the ravine while being picked. After a place has been picked, the "slash and burn" method of cultivation is used, first all the trees and undergrowth being cut down. After some ten days to a month of sunshine and wind blasts, the felled trees and grass gradually become dried up. Then they set fire to it, and the earth becomes scorched. The soil is dug after it has been well-soaked by rain. Digging generally is done in the spring, in the second and third month, and in the winter in the tenth and eleventh months. The earth has to be dug deep to loosen the soil so that the tung trees can grow tall and big and produce solid seeds, and live a long time. The selection of the tree is guided by the size of the tree and the abundance of the seeds, those of ball shape being preferred. The planting season is from the tenth month to the second month of the next year. Either seedlings are nursed for one

/61 cont./

245 year and then transplanted, or the seeds are planted directly. The trees are planted from seven to eight ch'ih apart; if they are too close it is injurious to their growth. Although both spring and winter are suitable for planting the tung tree, winter is preferred. The newly reclaimed mountain land 243 still can be also planted with mixed cereals before the tung 245 trees have grown to any great height, for the tung tree planted the previous winter already has sprouts aboveground in the spring, and at weeding time injury to the tung reeds in the ground can be avoided. After two or three years the tung grove cannot be used to grow any more mixed cereals, and has to be weeded constantly in order to facilitate their growth. Otherwise they are liable to die. After four years the trees 245 gradually begin to produce seeds, increasing year by year; and after six or seven years all of them are producing. They blossom in the third month of the year, and harvesting is done [805] in the eighth or ninth month, after the "Cold Dew /a solar term from October 8-22/." At harvest time the Miao go in [182] groups up the mountain to pick the tung seeds. Men balance bamboo baskets on their shoulders, and the women carry them on their backs. /Illustrations 32-35 on pp. 62-65/ /66/ If the tree is high they hit the branches with long bamboo poles to make the seeds fall down and then pick them up. If the [412] tree is short, they use iron hooks to get them. When the baskets are full they put them into baskets and carry them home. They put the seeds under the eaves or any damp place to enable them to absorb moisture. After a month or two the [258] outside of the seeds become black, and then they flay the [439] seeds, which are sold for the extraction of oil. The hulls are [252] burned into ashes, which can be used in place of soda.

The planting of the tea plant is comparatively easier than that of the tung tree, except that while the tea plant is still a seedling it is necessary to stick pine branches on the sides to shade it from the sun. Otherwise the seedlings are liable to be killed by the sun. Or one can delay the weeding of the field for six or seven months so that the various weeds can

[text continues on p.95]

2:Ling & Ruey--91 E-5 (1933) 1947 AE5 Miao AE5

/62/

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Illus. 32. Tung trees.

2:Ling & Ruey--92 E-5 (1933) 1947 AE5 Miao AE5

/63/

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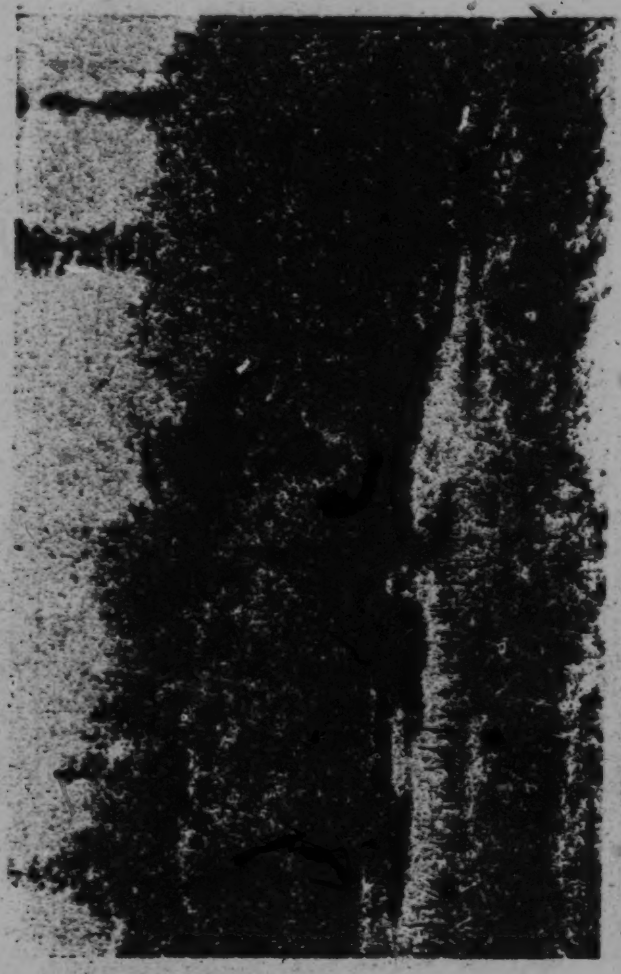

Illus. 33. Tea plants.

2:Ling & Ruey--93 E-5 (1933) 1947 AE5 Miao AE5

/64/

●245

Illus. 34. Pine trees.

2:Ling & Ruey--94 E-5 (1933) 1947 AE5 Miao AE5

/65/

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Illus. 35. Pine logs.

/66 cont./

245 prevent the seedlings from withering. According to the Miao the tea plant is very sturdy and can resist the cold. It blooms in the ninth and tenth months, the flowers being white in color, and fading in the eleventh month. After the second and third months, "blisters /p'ao/" form, which can be picked and eaten. They taste sweet and sour, and are often sold by the Miao women at the market place. During the seventh and eighth months the fruits ripen, and after being picked they are dried in the sun for three or four days. They split open themselves, disgorging two or four seeds. The seeds also must be dried in the sun in order tomake them dry and crisp, so that they will not get wormy and to insure a lot of oil when expressed.

[262] [443] [439] [258]

258 [439] Tung and tea seeds both yield oil. The Miao sell these seeds to the Chinese oil stores, few Miao people expressing the oil themselves. The few who do express tea oil still use a local method. The sun-dried tea seeds are pounded into bits in a mortar. Then they are dry-fried in a pan. Then water is added and brought to a boil. As bubbles of oil float on the surface of the boiling water, they are scooped out with an iron ladle and placed in a bowl. The bubbles of oil are heated again to make the water evaporate, and the residue is tea oil. The residual paste of the tung or tea seeds after the oil has been expressed is called tung paste or tea paste respectively. The tung paste can be used as fertilizer. The tea paste can be used as soap for laundry and also can be ground into powder to be thrown into the river to cause fish to suffocate so that they can be caught easily.

[412] [415] [241] [388] [226]

314 [249] Wild indigo plants grow abundantly everywhere in the Miao area. Although the Miao know how to cultivate indigo plants, they also gather wild indigo for dyeing. Wild indigo plants are one to two kung ch'ih in height. A big one has a stalk as thick as a man's thumb, a lone plant without any side branches, reaching toward the sky. The leaves are small and oval in shape, and contain a great deal of indigo. Every year in the eighth and ninth months when the weather is still warm and before the frost comes, the indigo leaves are at their most luxuriant. The Miao go out in numbers to pick wild indigo leaves.

/69 cont./

245 Among the pine trees produced in the Miao area, there is a red pine which has firm and glossy wood that does not rot when put in the earth for a long time. A good one has the quality of ox horn, is bright red, good for making implements, good-looking and durable. Also grey pine (Illus. 35) is produced, suitable for beams. Other products like mulberry, hemp 248 (Illus. 37), and cotton also are produced in quantity, and are important economic plants.

226 Fishing and animal husbandry. — The Miao like to eat [262] sour fish, so they have a number of ways of raising and catching [23] fish. To raise fish, pools in ravines are made into ponds, and [439] fry are bought from the Chinese to raise, particularly of huan and lien /a kind of bream/. Also, in low-lying rice fields they place a bamboo wattle fence to stop up the place where the field water goes out (Illus. 38), to keep the fish from flowing out. A great many common fish are raised in these fields. To catch fish they use nets, hooks, and poison. Fishing nets are cast anywhere at will in streams and rivers during the day. At night nets are put down in fast-flowing water along the embankments, on sand bars, at springs, and in shallow ponds. Also, they mix eggs with cooked rice and fry it in vegetable oil, and throw the rice in such places as still shallow water on a sand bar or in shallow ponds. Fish are said to be attracted by the smell of the food and come to gather at these places. Markers are set out in the daytime, and at night they come to these spots to cast their nets. The amount of the catch from these places is larger than elsewhere. They use a small bamboo [227] pole for a fishing rod, and a line twisted from horsetail hair. [171] The hook and the buoy are the same as those used by the Chi- [825] nese, and they also use such bugs as earthworms, centipedes, and spiders for bait. In the winter season the fish tend to remain [227] at the bottom of the water, and therefore they attach tiny pieces of lead to the line to make the hook sink down below. In the spring season when the weather gets warmer, fish become more active and swim to the surface; they therefore attach a piece of wood or twig halfway down the line to prevent the hook

/69 cont./

226 [227] from sinking, making it easier for the fish to bite. To catch fish with poison, they isolate a section of the river by erecting dams up and down stream, then cast the poison in the water to render the fish unconscious, when they are picked up. The [278] poisons used include tea paste, lime, potato seeds, willow leaves, and smartweed /t'u liao/. Tea paste, lime, and potato seeds have to be ground into fine powder before they are scattered in the water; the willow leaves and the smartweed are hashed into pulp with a hatchet, put into a bamboo sieve, and dipped into water. The pulp is rubbed against the bamboo with the hand to form a thick liquid, which is thrown into the water near a cleft or a cave in the cliff. When the fish smell the poison they become unconscious and float on the surface, and can be caught easily. Still another method is fishing in an illuminated pool. In such places as a shallow pool or a shallow place over a sand bar, they pick a suitable spot where they put a big rock and dig a deep pool called t'ang k'ou /"pool mouth"/. It is about a kung chih and a half in circumference and encircled with a screen of bamboo splints /Illus. 37-38 on pp. 70-71/ /72/, but with an opening left. Inside are laid slabs of stone, in which the fish love to seek shelter. When night comes the fisherman arrives with a torch. The fish are frightened by the light and struggle to escape, hitting the bamboo screen. Not a single fish is able to escape.

231 [492] [262] [241] The Miao rear cattle, horses, pigs, sheep, cats, dogs, chickens, and ducks. Cattle and pigs are the most important. Not all the cattle are for field work; some are slaughtered and sold for food. Pigs are used for food, and their manure for fertilizer. Horses, sheep, and ducks are comparatively fewer in number. Cats, dogs, and chickens are found in every household.

[245] Mulberry trees are grown in the Miao area. The Miao women also know how to raise silkworms. Formerly they did not know how to hatch the eggs. Every spring when the Chinese [439] started hatching silkworms, groups of them would carry baskets of native products to exchange for silkworms. They reared the

[text continues on p. 103]

4:Mickey E-5 (1940-?) 1947 AE5 Miao AE5

Kweichow is considered the poorest agricultural province in all China. Much of the soil is poor, and the steep, narrow valleys give but little space for farms, which are therefore usually small and cultivated by simple methods. Cultivation is confined chiefly to upland plains, the few open valleys and terraced hillsides, and is dependent upon conditions of soil, slope, and water. The total area of cultivated and cultivable land is estimated at five per cent. At one time the chief crop was opium, but the Chinese Government has tried to stamp out the growing of the poppy. One geographer lists in order of second importance maize and buckwheat, then tobacco, bamboo, wheat, oats, sugar, rice, fruits, indigo, silk, cotton, hemp, beans, and wild silk. Another gives in order of acreage rice, maize, beans, wheat, barley, and millet. In general, it may be said that rice is grown wherever possible and there forms the staple food. In the poorer mountain districts, where rice cannot be grown, the people depend upon maize, barley, and millet. Nowhere is more than one crop of rice grown and the harvest is in September or October. Winter crops commonly include wheat, pulse and oil seeds such as rape. There is a variety of excellent vegetables grown through the year. Fruits of the province include peaches, pears, apricots, persimmons, oranges, and lemons. There are also large crops of walnuts and chestnuts, including a wild variety. The chief trees are the fir, pine, and oak in the east, the t'ung in the west. In spite of rapid cutting, large reserves are thought to remain in Kweichow. The bambo trees are of several species, some suitable for construction and the making of articles of common household use and huge rain hats, others having edible sprouts. Tsunyi in the northern part of the province has industries for the making of a kind of cheap silk cloth and waterproof silk cloth, native umbrellas, and cotton goods. The villages of

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[134]
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4:Mickey E-8 (1940-?)1947 AES Misc AES

Sometimes a day was taken to bring in more fuel, or grass for the animals. The water buffalo were taken out night and morning for a mud or water bath, and ponies were allowed to graze in the meadow, with a small boy to guard them. One day we cut in a field into which they had strayed and in which they had beaten down the plants. Another occupation at this time was the gathering of chestnuts and English walnuts. The custom of tree ownership was in evidence here. One day we gathered from a tree right back of the Huang family temple. One man got up into the tree and beat the branches. Others, including the children, gathered up the burrs and nuts. There was a good harvest. The children had fairly good-sized baskets full, from which they later ate as they wished. There were also several loads of nuts in the burrs, which sold in market for six dollars a *sheng*.[6] Later we gathered from a tree in the wood. Here the tree was not only shaken, but branches were cut off and thrown down, with the burrs on them. A smaller variety, which grew wild on the low bushes on the mountains, was also plentiful.

The last half of the eighth month was rather rainy (after September 20th), with hot, sunny days between hard rains. Fortunately most of the rice had been harvested, but there still remained some of the ordinary rice and *lo mi* which had been left in the fields. This was not beaten out there, but brought in in sheaves, having been cut with the knife blade, not the scythe. *Lo mi* (glutinous rice) straw was used for the making of rice straw sandals, while the other was used for thatch and many other purposes. That not used at once was stacked up around the trees in the wood, a very pretty sight. The rain did not keep people from markets, for grain, chillies, and other seasonable produce had to be sold. The chief other crops at this season were soy and red beans, tobacco, millet, and a wild plant they called *ying tzu*. All of these had to be sunned on the mats, in bundles, or festooned across the front of the houses. Some of the beans and some of the rice from sheaves were

[6] One-tenth of a *sou* (see note 7, p. 35), or 31.6 cubic inches.

241 eight ears. The stalks likewise are placed in piles in the fields, and then carried in as needed for bedding for the animals, heating, cooking food, or even building house walls.

The Meo grow little mountain rice and almost never plain's rice. The areas rarely lend themselves to the latter crop. However we have discovered, especially at Gi Chu Phin near Van Bu, magnificent mountain cirques whose slopes were decorated with terraced rice fields up to an altitude of one thousand meters.

A side from hemp, buckwheat, and opium, other crops are planted in the furrows of the fields of maize and among the stalks of that plant. This is done in such a way that the same field may produce at the same time beans, peas, pumpkins, broad beans, cucumbers and a grain called cao lien which serves to make flour and the bread eaten on holidays.

When the maize has been harvested, a crop of buckwheat is sometimes sown in the soil.

249 Opium is sown in November, the poppy seeds being mixed
248 with ashes to protect them from insects. The incisions are made in the plant in April or May, then once all of them have given up their opium, preparations are started for a crop of maize on the same soil.

Hemp is grown at the lowest spot in the cirques, because it requires very deep arable soil. It is sown in April and harvested in
245 July. Sorghum is sown and reaped at the same time as maize. Finally some peach, pear, apple, plum trees, etc., are almost always found around the cabin. Their fruit, although less well flavored than those of France, is still not to be scorned.

286 The Meo make their cloth themselves from the hemp which
412 they harvest. Some of them forge their work tools, spades, plough-
415 shares, pruning-hooks, hoes, etc., and buy crude iron which comes from Yunnan for this purpose. They make their ladles and buckets, furniture, sandals of bamboo fiber, pottery and, in short, all of their farming implements.

252 /140/ To grind maize they use a mill similar to the Coi xay
243 of the Annamese, but larger. The movable mill-stone here is activate
462 by a crank which is articulated with a system of horizontal spokes attached to a strong wooden bar. Three or four women operate this bar by drawing it towards them and away from the mill, and then by pushing it towards the mill. The picture afforded by this exercise is one of vigorous movement. The bodies of these strong daughters of the mountain bending, their return movement which shows a glowing

/360 cont./

243 14. Sorghum, negro corn, is of minor importance for Thailand, to be sure, but must be mentioned here for the sake of completeness. Sowing and harvesting take place at the same time as that of maize, which corresponds with the observations made by Savina (1) /see footnote 1 above/ in Tonkin.

244 In general the customs of the Meau here and there seem to correspond with regard to agriculture. Lajonquière (2) [184] /see footnote 2 above/ also mentions a number of kinds and varieties of vegetables, such as beans, peas, gourds, broad [243] beans, cucumbers, and in addition a kind of grass, called [252] "caolien," out of which the Meau there bake cakes. These field products, classified by the author under the name of "secondary cultures," /361/ are planted, according to his description, between the furrows of the maize fields and ripen at the same time as the latter.

351 Vegetables, aside from the large-scale cultivation in the fields, are also cultivated in gardens for daily use by the 241 Meau in Thailand. Lajonquière (1) noticed special house- [244]

1. II, p. 310.

gardens in Indochina: "In the gardens, which they arrange around the houses, the Meau harvest radishes, eggplant, [249] beans, peas, and also tobacco in sufficient quantities for their personal needs."

[184] The Meau in Thailand, to be sure, do not plant eggplant, but in the vicinity of their houses they cultivate in particular [245] bananas and fruit trees, such as lemon, lime, and in rare cases orange trees. According to the statements of the author just cited (2) "the houses of the Meau in Indochina, on the

2. Page 309.

other hand, are surrounded by a circle of fruit trees which are not fenced off on the outside." The multiplicity of the [114] kinds of fruit there is clearly expressed in a description by

/361 cont./

351 Savina (3): "There are as yet no fruit trees, but that is still
241
245 3. II, p. 185.
114 to come, and, to be sure, next. In the next fruit season one goes to the neighboring villages, stuffs himself with pears, plums, apples, and apricots, 'remembers his mother, sister, and little ones,' and returns home with a full carrying-basket. The pits of these fruits are thrown into the thicket and germinate there. In a few years, fruit trees come up. This is the origin of the fruit trees that are seen around all Meau villages. Not a single one has been planted."

The author's statement that the fruit trees are not planted, but rather owe their existence to the pits haphazardly and thoughtlessly thrown away, cannot be upheld by anyone who -- as I did -- has seen how carefully the Meau select, plant, and tend their fruit trees.

248 I report on plants used in spinning and dyeing in the chapter, "Handicrafts."

412 The agricultural equipment of the Meau in Thailand will probably be best explained by the drawings. The small
243 crescent-shaped rice-knife (Fig. 268) is typical for the Meau. It is wound around the four fingers of the right hand by means of a string fastened to it, the stalk is seized with the thumb and the third finger, /362/ the cutting edge of the knife is pressed against the stalk with the ring finger and the little finger and cuts it (Ill. 95).[1] These knives vary in size, depending on whether they are intended for children or adults.
412 Other cutting instruments are: sickle (Fig. 271), chopping knife (Fig. 272), and the knife for harvesting poppies (chapter, "Stimulants," Fig. 289). Furthermore, the Meau have at their disposal the ax (Fig. 273), digging stick (Fig. 267), hoe (Figs. 269 and 270), weeding rake (Figs. 274 and 275). The
407 plow, on the other hand, as was described, is not in use among
184 the Meau in Thailand and has already fallen into oblivion, whereas it is still in use among the Meau in Tonkin, in accordance with its geographical feasibility. Abadie (1)

1. Page 310.

[1] [See cat 116, P 645 - ANALYST]

262 /374 cont./
252 Bamboo sprouts, which are cut up and cooked in water,
are very popular. Furthermore, both in the rice fields and in
[351] the small house-gardens, the Meau plant bananas and pomelos,
[245] which are only eaten raw, whereas bananas are also roasted or
fried in fat. In the gardens or in the poppy fields three varieties
263 of pepper are cultivated, which, like the hot chilies and a whole
series of wild fruits, likewise dried and pulverized, are used as
spices.

251 The Meau also preserve meat, and, to be sure, either by
[317] /375/ salting it or they let it dry in the sun or smoke it over the
[135] fire. Although salt springs occur naturally in northern Thailand
[171] and the Meau can also observe how the neighboring Lao obtain
[439] salt at such places, the salt needed is purchased from the traders
(see the chapter, "Trade") and not obtained locally.

252 Sugar cane is either eaten raw or sugar is made from it,
[262] which plays an important role among the Meau. For this the
sugar cane is peeled and cut into small pieces and pounded in
the rice mortar. The mass is then cooked for hours in large pans
until it is brown and begins to harden.

The Meau also know how to prepare yeast. For this purpose the granular seeds of a leafy plant are pulverized and kneaded to a dough with water. Some of the residue from the last alcohol distillation is added, and everything is left to ferment together for three or four days. Now the mass is dried
[251] in the sun or over the fire and finally poured into bamboo flasks
where it is said to keep, ready for use, up to two years.

From all these ingredients, and, I might say, basic foods, the Meau know how to make many composite dishes, a number of which can be called national dishes.

[262] For festive days cakes (tsŭă) are made, three kinds of
which are known.

1. Glutinous rice is ground to a fine flour. Now one takes nine parts of this flour and mixes it with one part of cooked and ground tubers. With the addition of water and a little sugar, the dough is kneaded, out of which small flat loaves about 12 centimeters in diameter are made. These are wrapped in green leaves and steamed.